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# Management of pain during mechanical ventilation weaning: The nature of nurse decision-making.

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MANAGEMENT OF PAIN DURING MECHANICAL VENTILATION WEANING:  
THE NATURE OF NURSE DECISION-MAKING

by

Christina Hurlock-Chorostecki RN, CNCC(C)

A Thesis  
Submitted to the Faculty of Graduate Studies and Research  
through Nursing  
in Partial Fulfillment of the Requirements for  
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## ABSTRACT

Despite extensive knowledge of pain and pain management, it remains common for critical care nurses to withhold sedation from patients for extended periods of time prior to, and during, weaning from mechanical ventilation. Using the research method of Grounded Theory, insight into the importance of pain management during weaning and the nature of decision-making related to pain management was sought. Ten critical care nurses from a moderate sized urban Canadian hospital were interviewed for their perceptions on pain and its management during weaning from mechanical ventilation. The findings from the study support a theory of decision-making that is a dynamic and continuous process of knowledge gathering, interpretation, and action. Within this process, two sets of nurse beliefs were identified that influence nurse decision-making. The strength of the two beliefs, in combination with nursing experience, create numerous lines of decision-making within the Belief-Decision Continuum and generate the potential to switch lines of decision-making during the process. The results of this study suggest that nurse beliefs may be more powerful than empirical evidence indicating that nurse beliefs may provide an answer to why pain management education has been unable to change critical care nurses' practice.

## DEDICATION

*This paper has been written with tremendous support from my husband Jay, son Eric, and daughter Jessica. Without their sponsorship, my dreams may never have been realized.*

## TABLE OF CONTENTS

ABSTRACT	iii
DEDICATION	iv
CHAPTER	
I.    INTRODUCTION	
Purpose of the study	1
The problem of managing pain during weaning	1
II.   REVIEW OF THE LITERATURE	3
Pain in Critical Care: Studies of the pain experience	3
Pain in Critical Care: Studies of analgesia administration	4
Mechanical Ventilation Weaning: Pain and analgesia administration	7
Decision-Making: Nursing experience	8
Decision-Making: Knowing the patient	10
Decision-Making: Communication	12
Decision-Making: Balancing	14
Significance to Nursing and Research Questions	15
III.  METHODOLOGY	17
The Setting	18
The Sample	19
Procedure	20
Analysis	22
Ethical Considerations	24
IV.  FINDINGS	26
Demographics of the Sample	26
Major Categories	26
Nurse Beliefs about Pain and Sedation	27
Nurse Roles in Weaning	30
The Weaning Puzzle	35
Managing Comfort and Weaning	41
V.   DISCUSSION	48
VI.  CONCLUSION	60
APPENDIX A: Demographic Instrument	61
APPENDIX B: Weaning Skill Acquisition Levels	62
APPENDIX C: Consent Form	63
APPENDIX D: Information Sheet	64
APPENDIX E: Interview Questions	65
APPENDIX F: The Belief-Decision Continuum	66
REFERENCES	67
VITA AUCTORIS	70



## CHAPTER I. INTRODUCTION

The purpose of this study is to understand how critical care nurses make the decision to give or withhold analgesia during weaning from mechanical ventilation. This study is important to the profession of nursing because for the hospitalized patient, nurses are the gate keepers to analgesia and the management of pain. While the physician prescribes the dose or range of doses a patient can receive, it is the nurse who makes the decision to give or not give the analgesic.

Pain and its management has only begun to be researched in critical care settings. The findings demonstrate that, despite current knowledge supporting the management of pain as the patient's right to treatment and an ethical obligation of health professionals (Agency for Health Care Policy and Research, 1992), pain remains poorly managed in critical care settings (Carroll et al. 1999; Maxam-Moore et al., 1994; Tittle & McMillan, 1994). Critical care organizations have reacted to these findings by supporting and taking the lead in implementing pain research. For example, the Canadian Association of Critical Care Nurses, in partnership with the American Association of Critical Care Nurses (AACN), has recently initiated the *Thunder II* project. The purpose of the *Thunder II* project is to investigate pain perceptions and responses of critically ill adults and children in several countries using pain assessments, self-reported measures, observations, physiologic measures, and analgesia assessment (Canadian Association of Critical Care Nurses, 1999). While this research will improve nursing knowledge of pain, it does not focus on nursing intervention strategies to manage pain more effectively. In an effort to complement such research projects, this study proposed that an examination of nurses'

perceptions of their decision-making process be implemented in an effort to understand how critical care nurses use empirical knowledge in making pain management decisions. In an effort to “capture the richness and complexity of decision-making” (p. 354), as Narayan & Corcoran-Perry (1997) suggested, the particular decision of pain management during weaning is the focus of this study.

## CHAPTER II: REVIEW OF THE LITERATURE

There are three important bodies of literature relevant to this study: pain in critical care hospital settings, pain during weaning from mechanical ventilation, and decision-making in critical care clinical settings.

### Pain in Critical Care: Studies of the pain experience

The belief that patients do not remember their experiences in the Intensive Care Unit (ICU) has prompted several researchers to include the element of recollection in their studies of pain in the critical care setting. The determination of the existence of recollection of the ICU experience establishes the importance for nursing interventions to promote patient comfort, satisfaction, and quality care. Of the studies reviewed on the pain experience in critical care settings, two in particular revealed vivid recall of the ICU experience and more specifically, recall of the experience of pain.

Twenty-one patients who were interviewed within 24 hours of discharge from ICU described experiences that were “often quite detailed and vivid” (Holland, Cason & Prater, 1997, p. 133). The purpose of this descriptive study was to establish what was recalled about the ICU experience. Ten themes were identified, with *caring behaviour* being the most prevalent and *pain* the second. Puntillo (1990), in an earlier study, reported similar findings. Using a descriptive design, Puntillo examined dimensions of the pain experience in ICU from the patients’ perspective using a convenience sample of 24 surgical ICU patients from two different hospitals. She found that “23 of the 24 subjects remembered a great deal of their ICU stay, and 17 of the 24 (71%) reported having pain” (p. 528). Three dimensions of pain were described: intensity, type, and communication.

Intensity was reported through three set categories of mild, moderate, and severe, which were not defined for the subjects. Puntillo chose not to define the categories to encourage the patients to define their own pain. Fifteen patients (63%) stated that the intensity of their pain was moderate to severe, and of these, seven recalled severe pain. It is important to note that of the seven who reported 'no recall of pain', one patient remembered little of her ICU stay and another was receiving epidural analgesia in ICU. The results of these studies are important to the proposed study as they provide evidence that pain exists and is recalled at a moderate to severe level by critically ill patients.

#### Pain in Critical Care: Studies of Analgesia Administration

With the changing belief in the occurrence and recollection of pain in critical care settings, researchers have begun to look at methods of pain management. In an attempt to describe current practice of analgesic prescription and administration in critical care, Maxam-Moore et al. (1994) reviewed 80 medical records of patients undergoing cardiac surgery. The charts were reviewed on the operative day, postoperative day 1, and postoperative day 2. Prescribed dose range of IV morphine (which was ordered for all except one patient) was 1 - 15 mg/hour (6.6mg/hour average) and the average administered amounts were 3.47 mg/hour (operative day), 3.58 mg/hour (day 1), and 3.2 mg/hour (day 2). Nurses administered only half of the prescribed analgesia. However, the authors cautioned against making a general statement that nurses undermedicate for pain, since patient status was not controlled for in the study and patient perception of pain was not described. When nursing practice in ICU is compared to that on a surgical unit, the mean pain intensity described by patients is approximately the same (38.1 on a 100 mm

VAS in ICU and 41.2 on the surgical unit), but the administration of analgesia is lower in the ICU (Tittle & McMillan, 1994). Although a pain intensity score of 38.1 is not high, Tittle and McMillan (1994) indicated that the patients could have had their pain better managed since only 30% of the maximum prescribed dose was administered by the ICU nurses despite a mean sedation of 1.1 on a five-point scale (0 = fully alert, 4 = comatose). Kuperberg and Grubbs (1997) examined patient perceptions of postoperative pain in ICU by interviewing 20 patients undergoing their first coronary artery bypass graft. Using a 10 point scale (0 = no pain, 10 = worst possible pain), 70% of the patients rated their pain on postoperative day 2 to be moderate to severe ( $\geq 5$ ). A chart review was also done to determine medication consumption. Consumption of the prescribed dose of analgesia on postoperative day 2 was found to be only 21% (oral) and 10% (parental) of that prescribed. Clearly, patients in these studies received only a fraction of the pain medication prescribed. However, it is difficult to discern whether the consumption of analgesia is a measurement of patient request, of nurse decision-making, or a combination of both. The results of these studies illustrate a clear pattern of findings which suggest a consistent phenomenon of undermedication of critically ill patients by critical care nurses. What remains unclear is why undermedication is occurring. Factors that contribute to critical care nurses' tendency to administer only small proportions of prescribed analgesia are not known.

Two studies on analgesia administration went beyond describing extant practice to examining potential indicators used by nurses in their decision to medicate. Through patient interviews of 213 ICU patients in 13 hospitals, 50% of patients stated that they

were often in pain, with 18% indicating that their pain occurred “almost always” (Carroll et al., 1999). Reviews of medical records revealed that only 12% of the prescribed analgesic doses were administered to patients on postoperative day 1, and 6% on postoperative day 2. Correlations were examined between the amount of analgesia given and pain intensity, age, sex, type of surgery and route of administration in an effort to investigate current pain intervention practices. The dose of analgesia administered was significantly correlated with age, type of surgery, and route of administration. Carroll et al. (1999) indicated that nurses tend to significantly reduce analgesic doses with older patients, and when the surgery is not thoracic or abdominal. Also, those patients who used patient controlled analgesia (PCA) received higher dosages of analgesic than when the medication was administered by the nurse. Gujol (1994), in a survey of 71 critical care nurses, explored a potential relationship between ventilator status and the length of time after surgery, and nurses’ decisions to medicate for pain. Through the use of two vignettes, Gujol determined that in the early postoperative period, and while patients are ventilated, nurses are inclined to believe patient reports of pain and will medicate patients more appropriately. Nursing concerns that tend to affect a decrease in analgesic dosing were identified in Gujol’s study. Nurses perceive dangers in administering analgesia which include respiratory depression, addiction, tolerance, physical dependence, and a loss of ability to wean from mechanical ventilation. Evidence suggests that in the critical care setting, analgesic administration is far below the amount prescribed and numerous factors play a role in how nurses decide on the amount of analgesic to give. What is not clear is the thought process behind the nursing decision to give or withhold analgesics. In order to

improve the management of pain, research into the thought process of the nurses is necessary.

### Weaning from Mechanical Ventilation: Pain and Analgesia Administration

Within the critical care setting exists a population of patients who, in addition to their reason for admission, are undergoing a process of being assisted to breathe spontaneously without mechanical ventilatory support (Knebel, Shekleton, Burns, Closkey, & Hanneman, 1998). This is commonly referred to as being “weaned” from mechanical ventilation. Research on weaning was deemed a priority for critical care by the American Association of Critical Care Nurses in the 1990's. Outcomes of this research included a more comprehensive definition of weaning (Knebel, et al., 1998), prescriptive practice guidelines (Knebel et al., 1998), identification of the gap between knowledge and clinical reality (Clochesy et al., 1997), and a nursing theory of weaning (Jenny & Logan, 1996; Logan & Jenny, 1997). The management of pain during weaning from mechanical ventilation has not been directly studied despite support that patients who are being weaned endure discomforts from diseases or traumatic injuries, surgical incisions, prolonged immobility, endotracheal tube position, suctioning, insertion and maintenance of specialty lines, and other invasive procedures performed (Jenny & Logan, 1996; Puntillo, 1990).

Despite evidence-based knowledge of pain in patients during weaning, critical care nurses frequently make a decision to withhold analgesia from the patient. Meehan et al. (1995) compared current ICU pain management practices to that of previous years using retrospective and concurrent chart audits. One of the findings reported was that currently,

analgesia was held fewer hours before extubation. Stannard et al., (1996) evaluated nurses' use of a pain intervention algorithm with mechanically ventilated patients. Despite the use of the algorithm, "withholding sedatives and pain medication in preparation for extubation was a common finding in this data set" (p. 439). Clearly, ICU nurses commonly make a decision to withhold analgesia throughout the weaning process (Meehan et al., 1995; Stannard et al., 1996). Although the practice of withholding analgesia is mentioned in the findings, the studies were not specifically designed to examine pain management during weaning. Clochesy et al. (1997) surveyed 1000 members of the AACN in an effort to determine important factors that affect the weaning process. With a 40% response rate, Clochesy and colleagues found that promoting patient comfort was only occasionally mentioned. Decisions being made by critical care nurses suggest that withholding analgesia is acceptable and is a common practice within the critical care setting. If this is so, then one must ask what other issues affect nurse decision-making in order to justify the suffering of pain in these patients. Price & Pooler-Lunse (1996) pointed out that "patients weaning from the ventilator are not exempt from pain" (p. 22). Once again, there is evidence to suggest that not only do critical care nurses undermedicate ICU patients, but nurses view this as a common and acceptable practice. What is unclear is why. What are the critical issues inherent in nurses' decisions?

#### Decision-Making: Nursing Experience

Decision-making skills evolve over time as nurses gain experience in clinical settings. Findings from studies on decision-making, pain management, and weaning in critical care reveal that nurses need to have experiences on which to build their judgement



skills, they need to know the patient, they need to know the hierarchy in which they work, and they must be able to balance nursing interventions in a multidimensional context (Chase, 1995; Clement & Buck, 1996; Jenks, 1993; Jenny & Logan, 1994; Stannard et al., 1996; Tanner, Benner, Chelsea & Gordon, 1993). Experience provides a frame of reference that allows the nurse to rapidly identify a problem and analyze it in relation to past situations.

Benner (1984) described a process of how nurses acquired skills in areas like decision-making in terms of five stages of skill acquisition. Stage one, the *novice* or the new nurse demonstrated behaviour that was rule-governed, limited, and inflexible. In the ICU, the novice nurse would rely heavily on a preceptor or senior colleagues to make decisions on analgesic amounts and frequency of administration. In stage two the *advanced beginner* began to apply knowledge from prior experiences. Nursing decisions at this stage were broadly based on recalled characteristics of patients and situations. At this stage, pain may be managed by following a familiar pattern of analgesic dosing with little flexibility. The *competent* nurse, stage three, demonstrated efficiency and organization, and had the ability to cope in clinical situations. The competent nurse responded appropriately to requests for pain medication, but may not have differentiated the multiple cues provided by the patient. Although the competent nurse had gathered experience and had developed skill mastery, speed and flexibility had not evolved. It was at this point in the model that the nurse moved away from reliance on formal models, decision analysis, and process models. The *proficient* nurse (stage four) perceived situations as a whole and quickly and accurately pinpointed problems. Nuances, subtleties

that mean one thing at one time, and something else later, provided direction for the proficient nurse. The proficient nurse was attentive to patient cues which indicated particular needs, and made analgesic decisions based on cues and knowledge of the patient. The nurse in the last stage, *expert*, had an enormous background of experience, thought intuitively, and worked “with deep understanding of the total situation” (p. 32). Expert nurses could “organize, plan, and coordinate multiple patient needs and requests and reshuffle their priorities in the midst of constant patient changes” (p. 149). The expert reacted to subtle cues from patients and would likely medicate a patient early and often. Benner suggested that experience was the foundation of the proficient and expert nurses’ ability to recognize a situation holistically, identify salient aspects, and quickly and accurately identify and act on the problem. She asserted that the study of proficient and expert nursing practice may be used to describe expert nursing performance and resultant patient outcomes, and may further develop the scope of practice of nursing. While Benner’s model illustrated how decision-making changes with experience, it does not explain how previous experience affects pain management decision-making in particular.

#### Decision-Making: Knowing the Patient

One of the central factors influencing nurses’ decision-making is how well nurses feel they “know” their patient. Narayan and Corcoran-Perry (1997) offered a “line of reasoning” as a representation of how decisions are made. Within the line of reasoning, Narayan and Corcoran-Perry discussed how cues, which are grouped in short term memory, trigger knowledge stored in long term memory. For example, wincing, a behavioural cue, triggers knowledge of facial expression of pain.

Within the population of patients who are weaning from mechanical ventilation, pain cues are complex. Puntillo (1990) studied pain in intensive care and identified that intubated patients used a variety of behaviours to indicate pain. Patients demonstrated behaviours such as signalling with the eyes, facial expressions, hand motions, moving legs, tapping hands, and triggering the ventilator to alarm when they were uncomfortable or in pain. Patients indicated frustration with the inability to communicate their needs and felt that “staff should ‘just assume that it hurts’” (p.530). Patients used an average of 3.6 different cues such as: gesturing, pointing, printing, moving lips, facial expressions, nod/shake head and squeezing hands in an attempt to communicate their needs (Menzel, 1998). Hall (1996) examined actions and reactions of nurses to ventilated patients and found that nurses spent more time giving information to patients than reacting to them. Thus, ICU nurses may simply not realize the meaning of patients’ signals or may not have the knowledge or the skill to respond to nonverbal communication without intense knowledge of the patient. It is clear from this empirical work that patients try to communicate their pain to nurses. However, nurses’ ability to recognize and accurately interpret these cues may be limited.

Research indicates that knowing the patient may be how the critical care nurse refines the selection of presenting cues. Tanner, Benner, Chelsea, and Gordon (1993) interviewed 130 ICU nurses to learn what “knowing the patient” means to nurses and what difference this knowing makes in their nursing care. Knowing the patient was described as knowing the patient’s patterns of responses (“qualitative distinctions that require prior local, specific, and ineffable knowledge” (p. 276)) and knowing the patient as

a person (their personality, modes of expression, and personal habits) (Tanner et al., 1993). Knowing the patient made a difference to nursing in four ways: it was central to skilled decision-making, it supported involvement with patients, it supported patient advocacy, and it set up learning (Tanner et al., 1993). “Knowing the patient” has been described as an important determinant of nurses’ decision-making outcomes (Jenks, 1993; Jenny & Logan, 1994). Jenny and Logan (1994), identified “knowing the patient” as “a reciprocal process of establishing a therapeutic relationship” (p. 30). Through the nurses’ descriptions it was found that nurses felt less sure of their judgement when they did not have particular knowledge of the patient. In knowing the patient, nurses felt they were able to assess the patient’s current status, predict patient responses, and gain trust. Jenks (1993), described “knowing the patient” as a major influence in the nurses’ ability to make clinical decisions. Although “knowing the patient” was not explicitly defined in the study, it was referred to as a personal relationship between the nurse and the patient. Nurses felt so strongly about knowing the patient that they described “feeling insecure and uncertain about their ability to make appropriate decisions in situations where that relationship does not exist” (p. 402). Clearly, the nurse’s perception of knowing the patient is an important factor linked to confidence and certainty in clinical decision-making. However, what is not clear is how this concept of “knowing the patient” impacts decision-making outcomes such as the administration of analgesics to patients during weaning.

#### Decision-Making: Communication

The ability of the nurse to make an effective decision regarding pain management is dependent on an ability to communicate openly within the health care team. In an

ethnographic study of a critical care unit, Chase (1995), suggested that nurses must communicate decisions within nursing and medical hierarchies. In this two-year study of thirty nurses and ten physicians, Chase (1995) determined that there was a hierarchy or blend of experienced and newer nurses functioning beside, and in collaboration with, multiple levels of physician expertise. For example, nurses' decisions were communicated through the nursing hierarchy using report, flow sheets, and casual conversations, and through the medical hierarchy using flow sheets, calling physicians, and coordinating team efforts. In this way hierarchies provided "a system of multiple checks that prevent lapses in judgment" (p. 161). However what remains unclear is how nursing and medical hierarchies influence analgesic dosing during weaning. It may be that the imperative to communicate decisions may be a factor in the decision-making process since communicating decisions places the nurse in a position to be judged and challenged. The complexity of professional hierarchies was described within the concept of "personal knowing" (Jenks, 1993). Within the theme of knowing, Jenks identified knowing peer nursing staff as important "to facilitate group decision-making and judge the utility of information provided by other nurses" (p. 402), and knowing physicians to facilitate collaborative decision-making. Knowing peer nursing staff was described as the personal relationships between staff members which facilitated the recognition of strengths and weaknesses, response to pressure from peers, and keeping the peace to preserve inter-staff relationships. Knowing physicians was described as establishing "a nurse-physician relationship characterized by trust in each other's perception and judgment" (Jenks, 1993, p. 403). It is not understood how knowing nursing peers and knowing medical staff affects nurses when making the

decision to give or withhold analgesia during weaning. It can only be speculated that relationships among nurses and between nurses and physicians may be a factor in decision-making in ICU. However, it is not clear how the relationship influences decisions regarding pain management.

#### Decision-Making: Balancing

When weaning patients from mechanical ventilation, the nurse is required to make many decisions that balance the multiple dimensions of pain management with the multiple dimensions of respiratory ability. Stannard et al. (1996) concluded that there are two domains of decision-making: assessing the patient and balancing interventions. Assessing the patient was described as “getting a sense for how the patient showed pain” (p. 436) and balancing interventions was found to be based on the nurse’s clinical understanding of the patient’s situation. To manage pain “nurses had to balance analgesic administration against the patients’ hemodynamic and respiratory conditions, medical plan and prescriptions, and the desires of the patients and the patients’ families” (p. 433). The balancing of interventions was further complicated when the ICU patient experiencing pain was being weaned from mechanical ventilation. Research indicates that weaning readiness is individual, and requires the nurse to critically analyze multiple dimensions of the weaning process (Clement & Buck, 1996). Clement and Buck (1996) recommended that successful weaning was based on the nurse’s “ability to assess and make decisions on a combination of factors for each patient” (p. 124). Because of the multiple parameters involved in weaning, the authors developed guidelines from research-based weaning parameters to facilitate nursing judgements regarding readiness to wean. These weaning

guidelines include expected outcomes that require a balancing of interventions to achieve readiness. What is not addressed in these two studies is how the nurses make the decision that the patient is in pain and how they make the decision in a way that balances effective pain relief with successful weaning.

### Significance to Nursing and Research Questions

Current empirical evidence suggests that patients in critical care settings experience and recall pain at moderate to severe levels and that critical care nurses tend to administer only a fraction of the prescribed analgesia. Further, mechanically ventilated patients rely on nonverbal cues to convey their pain to nurses and that nurses' decisions to give analgesics are highly complex and poorly understood. While the study of ventilatory weaning and the study of pain perceptions and responses of the critically ill have been individually given high priority for critical care nursing, a review of the literature reveals there is little research on how nurses make the decision to give or withhold analgesia in the patient weaning from mechanical ventilation. A study of critical care nurse decision-making related to pain management during weaning from mechanical ventilation has the potential to enhance effective pain management that is clearly needed in ICU. The results of this study will be significant to nursing knowledge related to pain management and weaning, and have the potential to promote the development and assessment of interventions to promote more appropriate pain management among critical care nurses thus reducing unnecessary suffering in ICU patients. The questions this study examined are:

- What is the nature of nurses' decision-making related to pain management during weaning from mechanical ventilation?
- What are nurses' perceptions of the importance of managing pain during weaning from mechanical ventilation?



### CHAPTER III: METHODOLOGY

Grounded Theory was used as the approach to this study given that little was known about nursing perceptions and the nature of nurse decision-making related to pain management during weaning from mechanical ventilation. The goals in using the grounded theory design were threefold.

The first goal was the identification of nurses' perceptions of the importance of managing patients' pain during weaning from mechanical ventilation. The second goal was to discover the nature of nurse decision-making as it related to pain management during weaning from mechanical ventilation. The final goal was to generate a conceptually dense substantive theory that illustrates nurse decision-making related to pain management during weaning from mechanical ventilation in critical care settings.

The identification of perceptions and the nature of decision-making were achieved through semi-structured interviews of critical care nurses. The study was designed to be holistic, to not make predictions, and be flexible enough to allow adjustments as information was gained through the interviews. The limited preliminary literature review was done to assist in identifying the scope, range, intent, and type of research that has been done. The researcher is an experienced, certified critical care nurse with personal experience in weaning patients from mechanical ventilation. Within the researcher's clinical experience it had been noted that it was a common practice among critical care nurses to withhold analgesia during weaning for long periods of time. Both this personal experience and the information gained from the literature review was bracketed to enable an open, thorough investigation of the phenomenon (Chenitz & Swanson, 1986).

## The Setting

The setting selected for this study was a 17 bed intensive care unit (ICU) in a moderate sized urban, Canadian hospital. The hospital's mission statement stemmed from the Christian faith and the ethos included creating a caring environment for healing. The hospital philosophy discussed the importance of empathy, dignity, respect, excellence, and teamwork. Their corporate values were listed as respect, compassionate care, community, and stewardship. The nurses in the ICU demonstrated these values through their open, pleasant and cooperative manner.

The ICU in this hospital was the designated trauma unit for both rural and urban areas serving a population of approximately 300,000 people. Patients were admitted for predominantly trauma, post-surgical, and acute medical alterations in health. The unit was not involved in cardiovascular surgery or coronary care.

Access to the setting was obtained through the manager of the ICU. The manager was receptive to having the study done in the ICU and expressed interest in learning the results. The manager supported the study by arranging access to the nursing staff, arranging a room for interviews, permitting nurses to be interviewed during their shift, and encouraging staff to participate in the study. The manager indicated that the staff of ICU were "a good group of girls" and would be willing to be interviewed. The ICU was considered a "closed" unit with one primary physician (intensivist) who was responsible for all the patients in the department. The health care team included an intensivist, the staff nurses, a respiratory therapist, a dietician, and an Acute Care Nurse Practitioner. Each morning and each evening the health care team participated in patient rounds. The staffing

pattern included ten nurses who provided patient care and one nurse in charge of the operational function of the unit. Depending on the number and acuity of the patients, more nurses were called in to work. On a monthly basis approximately 30 to 40 ventilated patients were cared for in this ICU and approximately 50-60% of a nurse's time was spent caring for a ventilated patient.

### The Sample

The sample was taken from the 67 full and part time nurses employed in the ICU at the selected hospital. The sample was obtained by convenience. Nurses were informed of the study through a poster displayed in the staff lounge, and a presentation of the study proposal at a staff meeting that described the purpose of the study and how nurses could participate. Ten nurses participated in this study. Five nurses volunteered after the presentation, one nurse made contact after reading the poster, and the remaining four were approached while at work. It was suggested by the manager of the ICU that nurses be approached while working. The nurses were comfortable with this approach stating "*you're not intruding, you're one of us*". Of those approached and asked to participate, eight persons declined. All participants met the following inclusion criteria:

- Registered Nurse working full or part time in ICU
- completed an orientation period in the ICU
- met hospital requirements to qualify to care for mechanically ventilated patients
- provided care for patients being weaned on a regular basis
- read and spoke English

### Data Collection

There were three methods of data collection used in the study. First, each nurse was asked at the beginning of the interview to complete a demographic instrument which recorded pertinent descriptive data (Appendix A). Second, each nurse was asked to rate her skill with weaning patients from the mechanical ventilator. A sheet of descriptions of Benner's (1984) five levels was given to the nurse to facilitate the rating (Appendix B). The manager of the ICU was also asked to rate all of the ICU staff using the same sheet. To maintain confidentiality, the manager rated all of the nursing staff prior to the collection of data. The participants were then placed in either Level I (novice, advanced beginner, competent) or Level II (proficient, expert) based on the two ratings. Two levels were selected based on Benner's (1984) comment "there is a leap, a discontinuity, between the competent level and the proficient and expert levels." (p.37). Third, each nurse participated in a thirty to forty-five minute semi-structured interview which was analysed for themes and categories.

### Procedure

At a staff meeting, the nurses were informed that the purpose of the study was to examine their perceptions and the nature of their decision-making related to the care of the weaning patient. Pain management was not specifically indicated as the focus of the study so that nurses would not be biased towards pain issues prior to the interview. During the interview, pain and pain management were discussed only after it was mentioned by the participant. Nurses were informed of the time commitment required to participate and the procedure to ensure anonymity and confidentiality for study participants. Interviews were

conducted over a two month period and took place at a mutually arranged time, and in a location most suitable to the nurse. The majority of the interviews took place in the ICU department either before or after a shift or while on a break during work hours. Staff were willing to cover patient care while a nurse participated in an interview. Prior to the interview a written consent was requested from the participant and any preliminary questions were answered. Each participant was given a copy of the consent form (Appendix C) and an information sheet (Appendix D) describing the purpose of the study, potential implications for nursing, and required involvement. Phone numbers of persons to contact in relation to the study were also provided. Semi-structured interviews were conducted by the researcher exclusively to ensure consistency across interviews. Throughout the study, the main interview question was “Tell me about your nursing activities when caring for your patient during weaning”. Additional probe questions were used to promote thorough descriptions of concepts, issues, feelings, and perceptions that emerged in the interview (Appendix E). These probes were not used to restrict the interview, but were employed to maintain the focus of discussion on the research questions. The questions used in the interview were generated from and validated by expert ICU nurses, personal clinical experience in the area, and the literature. Each interview was approximately thirty to forty-five minutes long. The interviews were tape recorded and the interviewer kept field notes to describe the context in which the interviews took place. The demographic instrument was completed by the participant at the beginning of each interview. After the initial question, minimal prompting was needed to continue the interviews. The nurses interviewed had a great deal of information to share

and were willing to talk openly. Closure of the interview included a summary of what the interviewer had heard the participant share and an opportunity for the participant to clarify, validate, or correct the researcher's understanding. Once analysis was begun and themes began to emerge, participants were contacted by phone and through informal interviews to verify findings. Their comments repeated the data that had been collected which supports rigor in data analysis. Once analysis was complete, participants were invited to comment on the results. Their comments validated the findings and theory as accurate and truthful.

### Analysis

Analysis in a grounded theory study is an ongoing reflective and interpretive process. It is "a process of conjecture and verification, of correction and modification, of suggestion and defence" (Morse & Field, 1995, p. 126). Taped interviews were transcribed verbatim onto a software program especially designed for qualitative analysis, QSR NUD\*IST 4.0. The unit of analysis was words, phrases, and sentences. In the initial stages, after seven interviews were completed, the interviews were read and reread. Incidents and facts were underlined in the text and given an abstract description of one to two words (code) in the margin of the document. A focus on nurses' decision-making was maintained throughout coding to ensure theoretical connectedness. Theoretical notes, the researcher's thoughts and questions that arose while coding, were noted in a separate book. Initial thoughts from the preliminary coding indicated content categories consisting of nurse beliefs, patient safety, patient comfort, patient strength, patient preparation, and getting to know the patient. Also evident in the preliminary coding was discussion of who

was in control of the situation. Upon rereading, two categories became quite apparent and well saturated with data. These were knowing the patient and nurse beliefs. A third category was emerging but was not quite clear. It was related to how the nurse managed concerns regarding airway management and tolerance of the weaning process. How the nurse's actions were limited, or level of nurse control, remained prevalent in the interviews. At this point, discussion with a more experienced qualitative researcher was sought. Three more interviews were completed using additional questions to validate the emerging themes. Theoretical sampling was used to select the three participants to ensure a near equal number of the two levels of nursing expertise, as well as to elicit variability of data within the emerging themes (Chenitz & Swanson, 1986). A broader view of the patterns was taken and three conceptual categories appeared to be prevalent throughout the interviews: knowing the patient, nurse beliefs, and supporting success.

To build the categories, interviews were read, reread, and compared to determine similarities and differences. The first code book was written with three categories and twenty-four subcategories. Definitions of categories and rules for coding data were written to ensure mutually exclusive categories. Subsequent coding was done with the content categories and their accompanying definitions were further analyzed and developed into contextual categories. The interviews were recoded using the new categories and their definitions and the categories were found to be contextual, substantial, and mutually exclusive. To ensure reliability and validity, an expert qualitative researcher reviewed the transcribed data. Agreement on the categories and the data saturation of the categories was achieved.

Memos, which are the notes, ideas, and hypotheses of the researcher, were maintained in a separate book (Chenitz & Swanson, 1986). Memos were dated, titled, cross-referenced, and filed. They included a summary statement of the anecdote that triggered the memo, the code number of the category, and the page of the field note or interview from which it derived. Memos were used to build and link categories, and through a storyline, identify the core category. Memos were written in a manner that demonstrated the researcher's intuitive thoughts, the link to existing knowledge or research, and a clearly described decision trail.

Diagramming was used to identify and illustrate categories, verify their linkages, and refine the theory. Diagramming was initially accomplished using category names on individual pieces of paper arranged on a foam board to present the flow of ideas. This method gave an overview of the emerging theory, demonstrated where further development was needed, and provided an easy manner in which to manipulate the data. The refined theory has been presented in a diagram.

#### Ethical Considerations

Ethical approval was received from both the university and the hospital prior to beginning the research. Confidentiality and anonymity of all data was strictly maintained. No names or identifying information were related to the data at any time and participants in the study were assured that only group results would be reported. To ensure that participants' employment positions would in no way be influenced by the results of the study, hospital employers did not know who participated and who did not. All access to the data was restricted to the researcher. Files were assigned identification numbers, all



shared information was placed into locked files, and transcription of the data was done exclusively by the researcher. Data will be destroyed when it is no longer needed.

The benefits and costs of the study were explained to each participant. The benefits to the participant included the opportunity to discuss their knowledge and experience with a non-judgmental person and the potential satisfaction of participating in research that could improve nursing care. The participants were told that the time cost required of them is a 30 to 60 minute interview and a follow-up meeting or phone conversation for verification of data descriptions. There were no risks associated with participating in the study. Any potential risks were no greater than those encountered in everyday life. The participants were informed that they were free, at any time, to ask for clarification, refuse to answer any questions, and terminate their participation without explanation.

## CHAPTER IV: FINDINGS

### Demographics of the Sample

Demographic data were analyzed using the computer software SPSS. All the nurses interviewed in this study were female as no male nurses were encountered on any of the visits to the ICU. The age range of the participants was 31 years to 50 years with an average age of 37.8 years. All of the participants were diploma prepared nurses who had obtained their critical care education through the hospital certification program. Eighty percent of the participants were Canadian, one was French and one was German. Their experience ranged from 8 years to 27 years, with an average of 15.4 years, and their ICU experience ranged from 1.75 years to 26.5 years, with an average of 10.1 years. The nurses worked with two to ten patients weaning from mechanical ventilation each month (average 4.75) with 50% of the nurses remembering weaning a patient in the last two weeks, and 100% remembering weaning a patient within the last month. Skill acquisition rating showed that 80% of the nurses rated themselves within the proficient and expert levels, while the manager rated 60% within the proficient and expert levels. The discrepancies between the staff and manager ratings were averaged with a higher weight given to the manager's rating resulting in four nurses in Level I (novice, advanced beginner, competent) and six nurses in Level II (proficient and expert).

### Major Categories

The abstractions of phenomena observed in the data facilitated insight into the nature of nurses' decision-making related to pain management and nurses' perceptions of the importance of managing pain during the weaning process. The core category, Belief

Based Decision-Making includes four major categories well saturated with data that emerged from the interviews are:

1. Nurse Beliefs about Pain and Sedation
  - 1.1. The Diagnostic Nurse
  - 1.2. The Humanistic Nurse
2. Nurse Roles in Weaning
  - 2.1. The Soldier Nurse
  - 2.2. The Nurse Advocate
3. The Weaning Puzzle
  - 3.1 The Technical Survey
  - 3.2 Contemplating the Big Picture
4. Managing Comfort and Weaning
  - 4.1. Steps Toward Extubation
  - 4.2. Anything for Success

Nurse Beliefs about Pain and Sedation: The Diagnostic Nurse Versus the Humanistic Nurse.

Nurse beliefs about pain and sedation is defined as thoughts that describe what a nurse believes or values as important in relation to the existence of pain and the management of pain during the preweaning and weaning stages of mechanical ventilation. The preweaning stage is the period of time when the mechanically ventilated patient is prepared for weaning. This stage may be minutes, hours or days long. The weaning stage is the period of time when the patient's dependence on the mechanical ventilator is

decreased until it is determined that the patient is, or is not, capable of breathing spontaneously without ventilatory support. This stage may last a few hours to half a day.

Within the interviews, two modes of nursing beliefs were clearly indicated and strongly held by the critical care nurses. The diagnostic nurse is the nurse whose beliefs suggested that the existence of pain and the use of sedation in the patient who is in the process of being weaned is a function of the patient's medical diagnosis. Medical patients, those who were ventilated for reasons such as complications from a lung disorder, were believed not to experience pain and not require pain management during weaning. For example one nurse stated:

*"Pain? I wouldn't think so. That would always depend on their diagnosis. If they've had a lobectomy or a pneumonectomy possibly, but I don't think that there's any actual pain."* (Participant #8)

Another nurse voiced it this way:

*"Medical patients are not usually in pain unless they were in a motor vehicle accident. But then, they are usually surgical."* (Participant #9)

While the diagnostic nurses expressed a basic belief that sedation was not indicated for weaning, sedation was considered if the patient had pain from surgery. The belief within this particular group of nurses was that surgical patients may require some sedation, but if pain was to become an "issue", then the weaning process should be stopped. For example one nurse voiced her belief about sedation this way:

*“We try not to [sedate] for weaning. Unless they have had surgery and they need pain sedation.”*

(Participant #1)

The belief of ending the weaning process if pain management was necessary was expressed by another nurse this way:

*“Give them something for pain and deal with the ventilator [weaning] issue after.”* (Participant #9)

The humanistic nurse is the nurse whose beliefs suggested that the existence of pain and the use of sedation is related to the individual patient who is experiencing the process of weaning from mechanical ventilation. The humanistic nurses expressed a basic belief that pain occurs during weaning, and requires sedation. Causes of pain were expressed as: having air pushed into you, having an endotracheal tube in your throat, and the act of suctioning secretions through the endotracheal tube. For example one nurse put it this way:

*“We do a lot of things to patients in here that cause pain. Just from lab work they have pain. They have pain from having a tube down their throat for weeks. It’s gotta hurt. When we suction them, we choke them. It’s gotta hurt. Sometimes you even get blood. I think they all have pain.”* (Participant #5)

The humanistic nurses viewed comfort as an important component of the success of weaning from mechanical ventilation. One nurse phrased it this way:

*“I like to see that they are weaning comfortably. That’s the most important thing for me. I don’t oversedate my patients but I am not afraid to sedate my patients when we’re weaning.” (Participant #4)*

Another nurse put it this way:

*“So whether we sedate them to the point that they are comfortable or whatever has to be done. It [sedating] is a necessity as far as I am concerned.”*

(Participant #10)

Within this category, data were found to support two distinct modes of nurse beliefs related to the existence of pain and the management of pain during the process of weaning from mechanical ventilation. These beliefs were strongly held and clearly stated. The beliefs of the diagnostic nurses were found to be determined apriori and to be a function of the patient’s medical diagnosis. The diagnostic nurses believed pain was not associated with the process of weaning. The beliefs of the humanistic nurse were found to be based in the ideation that weaning from mechanical ventilation was successful when the patient was comfortable. The humanistic nurse believed pain was associated with weaning and required sedation.

#### Nurse Roles in Weaning: The Soldier Nurse Versus the Nurse Advocate.

Nurse roles in weaning is defined as words or phrases used by the nurse to describe a perception of expected nurse behaviour patterns while caring for a patient in the weaning stage, the stage where their dependance on the mechanical ventilator is being

decreased. Within the interviews, data clearly delineated two different perceptions of the nurse role in weaning.

The soldier nurse is the nurse who described expected patterns of behaviour while caring for a patient weaning from mechanical ventilation to include: reporting to those in control, following orders from superiors, and maintaining a position within an appropriate line of command. Soldier nurses perceived the physician as the superior in control of the patient who was being weaned. Soldier nurses believed that their expected pattern of behaviour was to report specifics to the physician and wait for the appropriate decision to be handed down to them. For example, this nurse described reporting to the physician as the superior this way:

*“If we have to go back to regular vent settings, then we have to go back to the intensivist.”* (Participant #1)

Another nurse described her perception of expected behaviour as following commands:

*“Well, you know what we do a lot of times, we will go with what the doctor says”* (Participant #8)

While it was common for the soldier nurse to perceive the physician as being the ultimate voice of authority, some described following a line of command that placed the respiratory technician superior to the nurse during the weaning process. This was one nurse’s comment:

*“For the most part it [weaning] is totally the responsibility of the RT. We talk with them and discuss it all.”* (Participant #6)

Another nurse concurred with this perception as her statement indicates:

*“The RT makes the changes on the vent settings actually and then we just observe the patient for any changes in their respiratory rate or pattern.”*

(Participant #8)

Maintaining rank was another expected behaviour pattern perceived by the soldier nurse to be important while caring for the patient being weaned. While the nurse may hold beliefs contrary to the physician’s decision, the nurse maintained rank through uncontested acceptance of orders.

*“There are days when they’ve [the doctors] said ‘we’re going to extubate today’ and I said ‘I don’t think they [the patient] are ready’ and they go ‘we’re going to do it anyway’ and I say ‘OK’.* (Participant #1)

In relation to providing sedation to the patient who was weaning, the soldier nurses described a perception that their role was simply to follow the orders of their superiors. For example one nurse said:

*“ If it’s a physician’s order you have no decision to make when it comes to not giving analgesic or whatever thing it is specific to the patient.”* (Participant #6)

This nurse continued to describe the importance of following orders despite her belief that the patient was experiencing pain:

*“If you wean through the night and you’re supposed to*



*stop anything [sedation] after 6 o'clock or 5 o'clock in the morning and then they are not extubated until 9 or 10, that's a huge challenge because you are always reassuring them and you can't relieve them and you are right there looking at them and they are looking at you. You think they're anxious to get that tube out, they're uncomfortable and you can't relax them at all."*

(Participant #6)

The nurse advocate is the nurse who described a perception of being an equal member of the health care team. For the nurse advocate, expected patterns of behaviour while caring for a patient weaning from mechanical ventilation were described as: troubleshooting patient needs with the health care team, challenging health care team members' thoughts and decisions, and collaborating with health care team members to produce the patients' plan of care. The nurse advocate perceived herself as an important member of the health care team. This nurse remarked on her perception of the importance of her role within the team responsible for weaning the patient:

*"We do work as a team and that is important because you don't feel that you're all on your own. You don't have to do anything on your own because you can always bounce whatever thoughts go to your head off of somebody else and you know they are going to be receptive."* (Participant #10)

Another nurse described her expected participation with the team using behaviour patterns such as collaborating on decision-making with the team.

*“We have formal rounds at the bedside. You present your case, they [the interdisciplinary team] listen. You almost decide. You almost feel like you have a say in what is going on.”* (Participant #3)

One nurse described a perception of teamwork to include troubleshooting patient responses and needs with the respiratory technicians in this fashion:

*“I’ll call the RT’s ‘come and look at this guy. I can’t tell you what’s wrong but there is something going on’. They’ll come and they will brain storm with you.”*

(Participant #10)

Another nurse described challenging and collaborating with the respiratory technician as an expected behaviour pattern.

*“I usually keep a pretty good eye on it [respiratory rate]. If I find it is going over [30 to 35] I WILL discuss it with the respiratory therapist and we might have to go up on pressure support as we continue the weaning”*

(Participant #4)

The nurse advocate described a perception of team collegiality where an expected behaviour pattern included a level of comfort with challenging the thoughts and decisions of the team members. One nurse stated it like this:

*“ Sometimes you have to go up to the doctor and say ‘OK, things are going pretty good except for the guy is as anxious as hell and he’s getting bronchospastic, and the tube is driving him crazy’. So could we just give him a little bit [of sedation]. ” (Participant #4)*

Within this category, data were found to support two clearly diverse perceptions of the nurse role in weaning. The perception of expected behaviour patterns of the soldier nurse was found to be related to a rank of the nurse below that of the physician and the respiratory technician. The soldier nurses’ belief regarding their perceived role within the hierarchical structure was strong enough to over-ride their beliefs about pain and pain management. The perception of expected behaviour patterns of the nurse advocate was found to be based in the concept of team member equality.

#### The Weaning Puzzle: The Technical Survey Versus Contemplating the Big Picture.

The weaning puzzle is defined as words or phrases used by the nurse to describe the examination of salient aspects of the patient that may indicate tolerance of the weaning process and the need for comfort during the preweaning and weaning stages of mechanical ventilation. Within the interviews, data exposed two examination approaches used by critical care nurses.

The nurse who selected the technical survey as an approach to examination described getting to know the salient aspects of the patient through monitoring patient derived technological and behavioural indicators, and monitoring health care professionals’ reports. One nurse described her technical survey of the patient’s tolerance

of weaning this way:

*“You just mostly look at how much suctioning or what their vent settings are, what their gases look like, their drive to cough, if they follow any commands you give them.” (Participant #5)*

A second nurse described her technical approach to examining the patient’s need for comfort. She stated:

*“You see the trends of their blood pressure, you see the trends. OK she becomes very tachy, her PAP will go up and she’ll get restless in bed. That tells me she’s uncomfortable.” (Participant #2)*

Another nurse described a technical survey that included an examination of the patient’s tolerance of weaning interspersed with an examination of the patient’s need for comfort. She described:

*“Basically, just the patient’s vital signs and how they physically look to you. If they’re not enjoying it [weaning], they’re working really hard to breathe, if they’re having more secretions as you are weaning them, you know it’s not going well. Their gases obviously would reflect whether they are having problems. If they became more agitated then you would know it wasn’t comfortable for them.” (Participant #8)*

Another approach to the technical survey included getting to know the salient aspects of the patient by monitoring health professionals' opinions and reports:

*“If I’m coming on and this patient has an extensive history, where your prior nurse will give you report, is wonderful. I mean, hopefully it’s good. If it’s not, go back and look at the progress notes. We have daily papers we make on patients telling what happened from the time they got in. You have your data base that gives you a little bit of the history, you can read all the consult notes from the physicians, seeing the different areas. What they thought was the plan of care and what they believe all the different diagnoses are.”*

(Participant # 2)

Contemplating the big picture was the alternate examination approach used to examine tolerance of weaning and the patient's need for comfort. This approach was described as getting to know salient aspects of the individual through stepping back to look at the whole picture, personal knowing, and intuition. The nurses who contemplated the big picture described viewing many aspects of the patient as a whole entity. One nurse talked about viewing tolerances and weaning readiness this way:

*“We look at the big picture and see if the puzzle all fits together. If they’re ready, we’ll wean them. And if there are some things that aren’t going to fit into that puzzle*

*today, well then we just don't.*" (Participant #1)

A second nurse stated that tolerance of weaning and the need for comfort was best examined when she stepped back from the technology and saw the whole picture.

*"Just standing at the bottom of the bed and taking a look at her some of the times; stepping back. Sometimes that's a little bit more important I find."*

(Participant #7)

The nurses who contemplated the big picture described examining the patient as an individual as another aspect of establishing tolerance and comfort needs. For example, one nurse said:

*"I think everybody's individual and it's important to remember that. What works for one patient doesn't necessarily work for another patient."* (Participant #2)

Another nurse stated:

*"You have to remember that they are all individual people and they have a personality. I think we tend to forget and we read monitors and numbers."*

(Participant #5)

Developing a personal knowledge of the patient in order to identify individual indicators of tolerances and salient aspects that portrayed comfort was described as another aspect of contemplating the big picture. This personal knowledge was described as being acquired in different manners. One nurse stated:

*“It is nice to have a day to get to know them [the patient], to know what they sound like chest wise, their own personal; what they are like personally.”*

(Participant #1)

Personal knowledge of the patient was described as being acquired through discussions with the family. Here is how one nurse described attaining personal knowledge of possible comfort indicators from the family:

*“If the patient is on a ventilator you don't get that much information from the patient so the family can fill you in. You talk to them about the kind of person this is. Is he an anxious person versus a relaxed person? The chart sometimes gives you information about the patient's physical aspects but to get to know who that person is I go to the family and friends that come in.”*

(Participant #9)

A second nurse described learning about the personal aspects of the patient tolerances through the family this way:

*“The family will tell you a lot about who they are. This tells me, OK, this is a stubborn person, strong person, a person that doesn't listen well, or a weak person, a person that gives up easily. I think it all has to do with how this patient is going to do and progress through*

*being weaned off the ventilator.” (Participant #2)*

Descriptions of knowing the patient’s tolerances included learning the patient’s personal tolerance to pain management. For example, this nurse discussed fine tuning sedation to patient’s comfort needs and tolerance of sedation.

*“It’s nice to know your patient because some patients can tolerate sedation very well without it making them drowsy to the point that you are not going to be able to wean them. Some patients, you may need to fine tune your sedating to where they’re comfortable and you are able to wean them well.” (Participant #1)*

Another nurse described contemplating the big picture as examining the emotional side of the patient as personal knowing of comfort needs. She stated:

*“You can read an awful lot in a person’s face.” “You can tell by a person’s face if they are comfortable or not.” “I think that is the biggest thing that we forget with all the technology we have today. All we are doing is looking at the oxygen saturation, looking at your heart rate or blood pressure and we are really forgetting about what is under it all. We have all done it, we have all done it more times than we care to think about. But I think that is the biggest part of it, we forget the emotional side.” (Participant #10)*



A few of the nurses stepped into a higher level of examination of the big picture which they referred to as a gut feeling, a sixth sense, or intuition.

One nurse explained the ability to identify salient aspects of patient tolerance as intuition:

*“A lot of times you look at the patient and you just get a gut feeling about some people. I don't think he's going to wean well. I don't really know what it is but nine out of ten times your gut is usually right. Again, it's years of experience, but I can't tell you exactly what it is. You just get a sixth sense about it.” (Participant #10)*

Within this category, data were found to support two examination approaches of getting to know the salient aspects of the patient. The use of the technical survey fostered examining the patient's levels of tolerance of the weaning process and the patient's need for comfort as two separate entities. This examination approach promoted a limited view since the patient was lost in the technology. Contemplating the big picture was found to be a holistic approach of knowing the patient. The examination of the patient was based on knowledge of the individual gathered from a broad perspective of patient tolerances and comfort needs.

#### Managing Comfort and Weaning: Steps Toward Extubation Versus Anything for Success.

Managing comfort and weaning is defined as words or phrases used by the nurse to describe nursing actions that are done to or with the patient in an effort to support the patient's progression through the preweaning, weaning, and post weaning stages of mechanical ventilation. The post weaning stage is the period of time when the patient has

maintained spontaneous breathing after the removal of the endotracheal tube. Within the interviews, data supported two styles of patient management.

Steps toward extubation is a set of nurse managed actions that were done *to* the patient. This style of patient management included nursing actions such as positioning, mobilizing, suctioning, sedating, and making explanations to the patient. An initial step described by the nurses was providing explanations *to* the patient. One nurse's description was:

*“Tell them the process of weaning, what's going to happen. Explain to them what we're going to do”*

(Participant #2)

When families were involved or present, this initial step of explanation was extended to them as well. One nurse put it this way:

*“We usually get into explanations [to families] quite good. So they understand what is going on”*

(Participant #6)

Managing the patient's airway was the major step, or set of nursing actions, that was described as necessary for successful weaning. One nurse portrayed this step as:

*“We suction every two hours. We make sure that the airway's clean and clear. We make sure that the head of their bed is at an adequate level so that they are not having problems.”* (Participant #7)

Additional steps that were described are as follows:

*“We will try to make sure we get them up in the chair if they’re allowed.” (Participant #1)*

*“Positioning is a big thing, sitting comfortably up in the bed” (Participant #10)*

Providing sedation was another important step described by the nurses. Some of the nurses discussed reducing or withholding sedation as a step toward successful extubation.

One nurse stated it this way:

*“We would continue with the same medications only we wouldn’t actually sedate them as much as you previously had.” (Participant #8)*

Other nurses discussed the step of providing sedation within the context of airway management. One nurse discussed it like this:

*“We make sure that their pain is adequately controlled because if their pain isn’t adequately controlled they can’t cough, they can’t clear their airway. Then they can’t get off the ventilator.” (Participant #7)*

Anything for success is a set of nurse managed actions that are done *with* the patient. This style of patient management included nursing actions such as mutual goal setting, ensuring comfort, and communicating with the patient. One nurse stated:

*“I’ll try anything to make sure that they are successful. Sometimes just raising the head of the bed up a little bit, allowing them more rest periods, give them a*

*little bit of sedation, cutting back on the visiting during that time frame.*” (Participant #4)

Nurses who described doing anything to promote patient success discussed setting goals with the patient. One nurse stated it this way:

*“We used to do charts on the wall. Today we are going to be off for 2 hours and they kinda decrease it [ventilation] everyday. You have to have primary nursing there, someone that the patient trusts, that’s not going to walk away and leave them off longer because then they won’t go with the schedule.”* (Participant #3)

Another nurse recounted mutual goal setting this way:

*“It was like a whole day schedule that I set up with her. Like, do you think this is a good time? Do we set this time up for being up in the morning for this long? And then you’re back to bed for rest. What do you think about this time in the afternoon for this long? If they have a little bit of control over the situation, that’s important too.”* (Participant #1)

Selecting the style of doing anything for success included descriptions of ensuring comfort in the patient through a wide variety of methods. Relinquishing control to the patient was one method of providing comfort as this nurse described:

*“Try and alleviate all the things that might be making*

*them uncomfortable. You know, like positioning in the bed, there's no wrinkles underneath them, they have a nice soft pillow to lay on, they are not tied down.*

*(Spoken quietly) That's a big thing, patients being tied down. I know there is a place for it but I like to unrestrict my patients as often as I can, then they feel a part of this. They are not just being tied down for pulling out a tube, and they have no control. They have to know that they are in control too. I think it is a two-way street.*" (Participant #10)

Providing sedation was a second method of ensuring comfort discussed by this group of nurses. Providing sedation for patient comfort was depicted by one nurse this way:

*"I think that [sedating] varies with the patients, varies with the doctors, and varies with the way they are going to decide to wean"* *"They might not want you to give sedation, so don't give 5 mg of morphine, give 2 mg of morphine because sometimes the sedation is just for the fear the patient might have of whether they can do it on their own."* (Participant #4)

A third method of ensuring comfort was described as "being with" the patient. One nurse stated:

*"Tell the patient that they are going to be fine and*

*you're going to be there all the time, you're not going to be leaving them. This tube has been stuck down their throat and it's been life support for them and we're going to take it out now? Reassure them that you are going to stay with them and talk to them."*

(Participant #10)

Involvement of the family was a fourth method of ensuring comfort in the patient. One nurse commented:

*"They need to know that we're here to help them, that we're not here to judge them and we want to help them get better. If they want to have family in to support them, that is really important, that they feel comfortable, and I will try to get them through it."*

(Participant #9)

Nurses who would do anything for success spoke extensively about communicating *with* the patient. One nurse described promoting a simple method of two-way communication like this:

*"We try to come up with a sign language like 'If you are having pain then you need to put one finger up. If you think you need suctioning, I need to see two fingers'."* (Participant #1)

Another nurse portrayed a more involved method of two-way communication as this:

*“ I try to ask short questions with one word answers so that they can say either yes or no. Like ‘was your wife here today?’ or ‘how many kids do you have, hold up your fingers’.” “If they are strong enough to write I always like to let them write to feel like they have a bit more command.” (Participant #10)*

Within this category, data were found to support two styles of patient management. The use of steps toward extubation as a style of patient management was found to include a set of nurse managed actions that were done *to* the patient. Nurses who used steps toward extubation measured success as getting the patient off of the ventilator. The nurses who chose a style of patient management that included doing anything for success were found to be using a set of nurse managed actions that are done *with* the patient. Success with this style of patient management was measured as being able to ensure a comfortable and safe passage for the patient who was enduring the process of weaning.

## CHAPTER V: DISCUSSION

The findings from this study suggest that nurse beliefs play a dynamic role in the process of nurse decision-making. Two powerful sets of beliefs were identified in the analysis of the interviews. These include beliefs about pain and sedation, and beliefs about the nurse's role in the weaning process. The identification of these beliefs suggest a new theory of how nurses make the decision to sedate or not sedate the patient during the weaning process. The suggested theory identifies a complex process in which diverse avenues exist that supply a multitude of directions in which the decision-maker may travel.

The Belief-Decision Continuum: A Theory of Nurse Decision-Making

A theory of nurse decision-making emerged from the analysis that is circular, continuous, and complex. The theory can be visualized as four concentric circles or lines of decision-making (Appendix F). There are two outer circles that represent lines of decision-making of the less experienced nurse. Two inner circles represent the lines of decision-making of the more experienced nurse. The inner and outer circles are further delineated by a thick and a thin line of decision-making. The thick line represents the line of decision-making of the nurse who believes that pain does not exist during weaning while the thin line represents the line of decision-making of the nurse who believes that pain does exist during weaning. The circles are divided into six sections depicting the phases in the process of decision-making. The first of the six sections is the area where the nurse enters with established apriori beliefs. Arrows entering into the circle at this section indicate the line of decision-making with which the nurse initiates the process of decision-making. These beliefs, and the level of experience, impact on how the nurse selects and



interprets cues from the patient. Cue selection and cue interpretation are the second and third sections in the circle. Role perception is the fourth section of the circle. It is at this point in the decision-making process that the nurse may or may not switch lines of decision-making based on the powerful nature of role perception. In this section the arrows indicate that the nurse may shift from the outer circle to the inner circle, or vice versa, prior to selecting an appropriate action. This shift is dependant upon whether the nurse feels able to assume the role of the advocate nurse, or choses to defer decision-making and assume the soldier role. Which role the nurse assumes determines her actions. It is in the fifth section that the nurse selects an action and enacts it. While experience and beliefs are integral to action selection, role perception has the ability to exert enough power to effect an action contrary to beliefs. In the sixth and final section of the circle, the nurse returns to the original line of decision-making. With beliefs unchanged, the nurse will continue the process of cue selection and interpretation in an effort to evaluate the effect of the actions selected. This theory is made complex by the powerful influencing factors of nurse beliefs about pain and sedation during weaning and nurse role perceptions. Beliefs have created a double line of decision-making within the two identified levels of experience, while role perceptions have exerted a force that may cause a shift from the inner to the outer circle.

The main tenets of the theory are that:

1. Apriori beliefs exist that are not patient specific and are strong enough to be maintained throughout the process of decision-making.
2. There exists a circular process of knowledge gathering, interpretation,

and action that is dynamic and continuous.

3. Role perceptions have the power to generate action that is in contradiction to nurse beliefs.

There are differences in practice between the expert and the new nurse. Benner (1984) suggested that experience was the source of this difference. Experience is one factor that promotes the nurses' progression from the outer circle to the inner circle in the present theory. While experience is a major factor in this movement, well seated beliefs and powerful perceptions of the nurse role have an impact on the movement to becoming an expert nurse. The circular design of knowledge and action was suggested in Ford and Profetto-McGrath's (1994) model of critical thinking. The design of the present theory is also circular with influencing the factors of nurse beliefs and role perceptions as well as cue selection, cue interpretation, and action.

The knowledge and understanding of how nurses make decisions in the critical care setting related to the management of pain during mechanical ventilator weaning is significant to nursing. This theory provides a new perspective on the factors that influence nurses in their decision-making, both what the influences are and where they impact in the process. The theory, as it stands, provides an avenue for critical care nurses to examine their personal beliefs and perceptions and the resulting effect they have on decisions. As a result of understanding the nature of nurses' decision-making during weaning, interventions that encourage advocacy and a holistic approach can be developed and implemented in ICU settings. Future research that tests the efficacy of this theory could then support a shift in the basic education of nurses and the orientation of critical care

nurses to that of evidence-based and a more holistic, autonomous type of practice.

Two major issues affecting decision-making arose within the emergence of the theory. One of the fundamental issues arising from this study is the impact of nurses' beliefs about pain and sedation. More than half of the nurses interviewed held the belief that pain does not exist in association with the process of weaning. This indication that the management of pain during weaning is not important for more than half of the nurses is a startling finding with tremendous implications for nursing practice. One must ask why, with published and ongoing research (Jenny & Logan, 1996; Puntillo, 1990; Puntillo - Thunder II project), do nurses continue to hold the belief that weaning from mechanical ventilation is not associated with pain. Pain is a human experience whereas weaning is a technological process. Perhaps the vast amount of literature, both research and systematic overviews, on the process of weaning has influenced nurse beliefs. It may be that the published literature has encouraged critical care nurses, and critical care nurse educators, to focus primarily on the technical process rather than the human experience. It may be that nurses, and nurse educators, perceive that technological competency is valued far more than humanistic caring within the critical care environment. Perhaps pain is not supported in the ICU as a major focus. If not, it may be that ICU nurses do not access pain literature. The type of literature commonly found available in ICU settings includes technological advances and technology manufacturer advertisement. The culture within the ICU setting is commonly one that values numbers rather than a balance of humanistic and technological care.

The apriori nature of nurse beliefs about pain and sedation is of tremendous

significance to the practice of nursing. The humanistic nurse expressed a basic belief that pain occurs during weaning, and requires sedation. Analysis of the interviews revealed that the humanistic nurse believed that the existence of pain and the use of sedation was related to the individual patient who is experiencing the process of weaning from mechanical ventilation. The apriori goal for the humanistic nurse was one of comfort during the process of weaning that would result in extubation. Although this goal may be established apriori, the nurses indicated that the need for sedation was determined by each individual patient. The humanistic nurse approached the patient with a broad scope of cue identification and interpretation thus allowing the patient to provide information about pain and the need for sedation. Patient cues, such as rapid respiratory rate and high blood pressure, were identified by the humanistic nurse, within the context of the patient and were likely interpreted as a need for comfort. For this group of nurses, providing comfort was considered very important, as it had a major influence on the success of weaning.

The diagnostic nurse entered into the decision-making process with apriori beliefs and an apriori goal focused on the process of weaning. In an effort to be successful with weaning, nurses within this group spoke routinely of reducing and withholding sedation prior to, and during the weaning process. Sedation was viewed as an inhibitor to the process of weaning. The potential side effect of a reduction in respirations while administering morphine, a medication common used during ventilation, was likely viewed as a negative outcome during weaning. The benefits of the use of the drug were likely not considered. The high incidence of discussion about reducing and withholding sedation found in the study supports what other literature has suggested: that critical care nurses

have made little change to the common practice of withholding sedation during weaning (Clochesy et al., 1997; Stannard et al., 1996). Knowing the patient, or cue identification and interpretation, is influenced by the apriori nature of pain and sedation beliefs. With the belief that pain does not exist with weaning, and a task oriented goal of extubation, the diagnostic nurse tends to focus entirely on the technological aspects of the weaning process. It is likely that this narrowing of focus limits the nurses' knowledge of the patient. It may be that the apriori nature of this belief limited the ability or willingness of the nurses to recognize pain and may therefore have led to inadequate pain management in their patients. For example, if it was believed that pain does not exist during weaning, patient cues, such as rapid respiratory rate and high blood pressure, would be identified from within the context of the process of weaning and interpreted as the patient's inability to tolerate weaning. This behaviour is concerning since individuality has little opportunity to enter into the process of cue identification. Without individuality, knowing the patient becomes a function of the technical process of weaning.

Benner's (1984) model of Novice to Expert suggested that the technical survey of patient cues is a characteristic of less experienced nurses. However, findings from the present study suggest that the level of critical care experience was not a factor in determining which style of beliefs a nurse would participate in. The suggestion that experienced nurses may hold limiting, apriori beliefs that will lead them along a similar decision-making course as the inexperienced nurse is of significance to nursing practice. The implications of an experienced critical care nurse making decisions in a manner similar to an inexperienced nurse include concerns that the nurse may not function as a team

player in the ICU environment, may not be participating in complete care of the patient, is not likely a resource to team members and new staff, and may be practising nursing in an unethical manner. Research needs to examine what influences the nurse to move toward a more humanistic practice in a technological environment, and what barriers inhibit this growth. Ajzen & Fishbein (1980) described in their Theory of Reasoned Action a possible explanation for why experienced nurses do, or do not, move toward autonomous decision-making. Behavioural beliefs, the conviction that an action will result in a positive outcome, influence individual to act or not act. While this particular theory has been used most commonly to predict health behaviours, behavioural beliefs could be extrapolated to describe nurse behaviours resulting from beliefs about the existence of pain and the need for sedation. If the experienced critical care nurse believes pain does not exist, then providing sedation will not produce a positive outcome. This nurse would likely recite the negative side effects of morphine as the basis for her actions. It may be that when these are the beliefs, a positive outcome is understood to be achieved through the withholding of sedation. Greipp (1992) discussed the belief system as a learned potential inhibitor that influenced decision-making. In her Model of Ethical Decision Making, the belief system was described as “a basic set of values and assumptions that the person holds to be true...[which] may or may not be based on fact”( p. 48). Greipp indicated that the belief system, and other potential inhibitors, can enlighten or bias the nurse and have the ability to affect how the nurse approaches the patient.

The apriori nature, and the strong impact beliefs have on nurse decision-making have immense implications for nursing practice. Well embedded beliefs systems may be a

major factor in the nurse's ability to change personal practice. In an effort to improve and strengthen nursing practice related to optimal weaning of patients from mechanical ventilation, future research needs to examine what nurses believe about pain associated with weaning, what nurses believe about sedation, and what function does experience play in nurses' belief systems. It is likely that the high volume of published statistical evidence on the process of weaning has been able to promote a practice change in the technical aspect of the weaning while moving the nurses' focus away from the patient. Perhaps research should refocus on the experience of enduring weaning to grasp the humanistic aspect of the event. If nurses understood the experience of being weaned, perhaps they would evaluate their present beliefs and provide more individualized, humanistic approaches to critical care nursing practice. With the suggestion that beliefs may be an inhibitor within decision-making, it is important that nursing begin to research the impact of present education on belief systems, the ability of education to change beliefs, and the role of experience in the development of beliefs. If basic and critical care education have fostered a belief that pain does not exist and sedation is unsafe, future research needs to examine how some nurses choose to believe differently. Insight into an improved method of educating and orientating critical care nurses may be gained through learning how selected nurses began to believe that providing sedation to the patient promoted the positive outcome of comfort, relaxation, and adequate breathing.

The second major issue arising from this study is the importance of how nurses see their role in the decision-making continuum. Nurses' perceptions of their role during weaning impacted on their actions. Their perception of this role had a remarkably

powerful influence on pain management decision-making during weaning. The nurse enacting the advocate role was comfortable in challenging and collaborating with other members of the health care team in an effort to promote patient comfort and ensure a successful attempt at weaning. While the nurses who described an advocate role were those who had worked in critical care for a longer period of time, not all experienced critical care nurses perceived this role. It may be that years of experience within critical care promoted a level of comfort within the nursing and medical hierarchies that encouraged collaboration. What is not understood is why this does not occur with all nurses as they gain experience.

The soldier role, described among both experienced and less experienced nurses, demonstrates a passive participation in decision-making. A lack of experience base contributing to the use of rule-governed behaviour, which has been described in Benner's (1984) model, provides support to less experienced nurses perceiving a soldier role. This passive participation in decision-making may be a result of a lack of ethical awareness of medicating for pain and limited experience with pain management during weaning. Experienced nurses also described enacting the soldier role. This suggests that the level of experience is not necessarily a function of role perception, since many experienced nurses never achieved the advocacy role. For example, one expert nurse believed that pain existed during weaning and was willing to provide sedation but adamantly believed that the physician's order took that type of decision-making out of her hands. Passive participation in decision-making is a deference or delegation of decision-making which, in effect, reduces ethical considerations of the management of pain to legal ones. The finding that



role perceptions were powerful enough to influence a humanistic nurse to defer decision-making and conduct actions in contradiction to beliefs is significant to nursing practice.

Three potential factors in relation to the deference or delegation of decision-making arose from the findings. These factors include self efficacy, feelings of control, and care-giver stress. Self efficacy, the personal beliefs of one's capabilities, has been described in the delegation of decision-making. Bandura (1986) suggested that when a person believes that they do not have the capabilities to make a decision, they will delegate the act to others. Perhaps nurses who defer decision-making to physicians have a limited sense of self efficacy in their professional practice. This limited sense may be a result of the format of basic nursing education, methods of orientation for new nurses into critical care, the socialization of nurses into the hospital or critical care culture, or a subordinate vision of nursing by health care professionals, society, and nurses. Future research needs to examine the social hierarchy of intensive care units that either encourage or discourage advocacy in the critical care nurse. Socialization of new nurses into the critical care areas needs to be examined for its effect on self efficacy. Research into the vision of nursing, particularly how the profession is viewed by others, may indicate strengths or weaknesses that may influence the sense of self efficacy.

A second explanation for deferring decision-making may be the nurses' perception of a lack of control over decision-making. The nursing role as a soldier is consistent with Florence Nightingale's theoretical model of nursing. Nightingale believed that nurses should follow orders, which placed the nurse in a subordinate position relative to other health care professionals. This soldier role was fostered for many years in nursing

education, and even in the present physicians continue to have the legal power to prevent the growth of the scope of practice of other health professionals (Sutherland, 1996). In addition, patriarchy continues to be the norm in society leaving nursing, a predominantly female occupation, with little power. Within the hospital environment, medical advisory committees maintain control over changes within other health professions. Within the ICU, the practice of nurse decision-making may be limited through strict rules and policies. The soldier role in critical care is further supported by society through societal perceptions of a dependence on life-saving technology and societal expectations of technologically competent nurses. It is well documented that the holistic aspect of nursing continues to be devalued while those tasks that align with the traditional medical model are rewarded (Lang & Krejci 1991, Sohler, 1992). It may be the sense of a lack of control in one's practice that leads a nurse to defer decisions out of frustration. Perhaps a vision of nursing as a subordinate member of the health care team reduces the perception of control. Perhaps hospital or critical care environments and cultures inhibit or strengthen the development of collegiality with members of the health care team. With the suggestion that perceptions of a lack of control over decision-making influence nurse role perceptions, it is imperative that future research seek to understand control perceptions of nurses. This understanding would have the ability to influence the practice of quality nursing care. Research into the nature of working environments for nurses may provide answers that will enable nursing to examine and understand issues of power and control within their personal practice.

The third factor identified in relation to why nurses defer decision-making may be

a function of stress. Highly experienced nurses may need to delegate decision-making to others, such as physicians, in an effort to reduce the stress of caring. For example one nurse spent time discussing emotional support of the patient and family. Giving emotional support “can take a lot out of you sometimes [rather] than watching numbers and closing yourself off to the rest of it. Anybody can watch numbers. The other part’s tough.” (Participant #10). The idea that caring can “take a lot out of you” is well documented in the literature. Carmack (1997) contended that a balance between engagement with a patient and detachment is necessary for nurse self-care. Benner and Wrubel (1989) revealed that nurses protect themselves and numb their emotions through overinvolvement in the helping role or objectifying and depersonalizing the patient. Perhaps nurses in critical care are becoming overwhelmed with the critical nature of the patients they care for. Perhaps the concept of “burn-out” is a function of being experienced and holistic in nursing care, yet being unable to balance the giving of oneself with the personal need for caring. Research into the effect on nurses of caring for critically ill patients may provide insight into why experienced nurses delegate decision-making and why nurses do not stay within critical care. Future research needs to examine the issue of care-giver stress perhaps through methods used by humanistic, experienced nurses that demonstrate an ability to balance work life with personal factors, and home life. Issues such as similarities and differences in decision-making styles related to perceptions of power and control also need to be explored through research.

## CHAPTER VI: CONCLUSION

The theory that has emerged from the analysis of findings in this study can make an important contribution to the practice of critical care nursing. It is necessary that this theory be explored and validated by further research in order to establish the extent of its application to other nursing populations. The most significant finding of this study is the realization that, for many nurses in ICU, decision-making is not based on empirical data, but on beliefs. The influence of beliefs about pain and sedation, and beliefs about the nurses' role in weaning, and the dynamic impact these beliefs have on nurses of all levels of experience is immensely significant to the practice of critical care nursing. The findings from this study have the ability to guide the development of interventions that will enable critical care nurses to make effective, holistic, and technically competent decisions on the management of pain throughout the weaning process. An improved understanding of how the expert nurse alters beliefs and role perceptions throughout years of nursing to reach the ease of accurate, humanistic decision-making would support new approaches to how nurses are socialized and mentored in ICU settings. An examination of the human experience of weaning may also have the ability to promote a change in beliefs and nursing practice. Empirical knowledge of role perception, and those factors that influence nurse perceptions of their role, may provide insight into methods of promoting equal partnership and collaboration among the health care team in ICU, thereby promoting a greater quality work-life, and nursing practice models that are meaningful to both nurses and the families they provide care for.

## APPENDIX A

## Demographic Instrument

	Data
participant identification number	#
age	
sex	<input type="checkbox"/> male <input type="checkbox"/> female
culture	
education level	<input type="checkbox"/> diploma <input type="checkbox"/> BScN <input type="checkbox"/> MScN <input type="checkbox"/> other
years of nursing experience	
years of ICU experience	
ICU certification	<input type="checkbox"/> in hospital <input type="checkbox"/> CNCC(C) <input type="checkbox"/> other
last time assigned a weaning patient	(yyyy/mm/dd)
patients weaned per month (average)	
date and time of interview	(yyyy/mm/dd)
date and time of follow-up interview	(yyyy/mm/dd)
method of follow-up	<input type="checkbox"/> phone <input type="checkbox"/> formal interview  <input type="checkbox"/> informal interview

## APPENDIX B

<b>Novice</b>	very limited experience with patients who are being weaned from mechanical ventilation. Goals and tools of patient care are unfamiliar.
<b>Advanced Beginner</b>	limited experience with patients who are being weaned from mechanical ventilation. Overall characteristics, such as weaning success indicators, can be identified from previous experiences.
<b>Competent</b>	has worked with mechanically ventilated patients 2 or 3 years. Able to cope with and manage changes in the patient. Conscious, deliberate planning of the weaning takes place.
<b>Proficient</b>	has works with mechanically ventilated patients more than 3 years and has the ability to recognize whole situations. Knows typical events that can be expected during weaning from mechanical ventilation and recognizes deterioration or patient problems and modifies plans prior to explicit changes (such as vital signs).
<b>Expert</b>	has an intuitive understanding of weaning each patient from mechanical ventilation. Has a deep understanding of the whole situation and can zero in on a problem quickly and accurately.

Adapted from: Benner, P. (1984).

## APPENDIX C

**Consent Form**Nurse decision-making in the care of patients weaning from mechanical ventilation.

Your participation in this research study is completely voluntary and you are free to withdraw from participating in the study at any time without explanation. You may ask now, or in the future, any questions you have about the study or the research procedures. If you have any questions about the study please contact myself, Tina Hurlock-Chorostecki (519-464-4506), or my thesis advisor, Anne Snowdon, School of Nursing, University of Windsor, 253-3000, ext. 2275. If you have any ethical concerns related to this study please contact Cheri Hernandez, Chair, Research Committee, School of Nursing, University of Windsor, 253-3000, ext. 2263.

I, the undersigned, agree to be interviewed and to complete a short information sheet. I am aware that the interview will be audio taped and that the audio tape will be stored in a locked cabinet. All the transcripts and audiotapes will be destroyed once the study has been published. I also understand that the researcher will contact me at a later date for a short conversation to establish truthfulness of the study findings. I give permission to use the interview transcripts and the information collected from this study for research purposes only. I understand that all information will be held strictly confidential, and that my name or any identifying information will not be revealed at any time to anyone. I am aware that all information and all interviews will be coded by subject numbers in order to assure the confidentiality of my identity and that once data analysis is complete the master list will be destroyed. I understand that my decision to participate will not affect my employment or my role as a nurse in the ICU. I am free to withdraw my consent and to discontinue my participation in the study at any time without explanation. I understand that group findings of the study will be available upon my request and that the research report of group findings will be submitted for publication.

I have read the information form and this consent form and all my questions have been answered to my satisfaction. I voluntarily consent to participate in this study.

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**Participant**


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**Date**


---

**Witness**

## APPENDIX D

### Information Form

My name is Tina Hurlock-Chorostecki and I am currently a Masters of Nursing student at the University of Windsor. I have received approval from Hotel Dieu-Grace Hospital and the University of Windsor to conduct this research study.

#### **Purpose of the Study**

The purpose of this study is to examine your perceptions and the nature of your decision-making related to the care of the patient weaning from mechanical ventilation. This information will be helpful in improving nursing knowledge through promoting the development and assessment of nursing interventions, and through proposing ideas on how nurses in ICU make decisions which can assist in teaching nursing students, precepting new staff, and promoting a more effective orientation to critical care areas. This research study is a requirement for completion of the Masters of Science in Nursing program. There are no risks associated with participating in this study.

#### **Inclusion Criteria for this Study**

- ◆ able to read and speak English
- ◆ Registered Nurse working full or part time in ICU
- ◆ have completed orientation in ICU and qualified to care for mechanically ventilated patients
- ◆ provides care for mechanically ventilated patients on a regular basis

#### **Your Involvement will Require**

- ◆ participation in an audio taped ½ to 1 hour personal interview. This interview will occur at a mutually agreed upon time either during your shift, provided there is sufficient staff to cover your patient assignment, or before or after your shift. If the interview is during your shift, it is expected that you would respond to any unit emergency as you would if this were your break.
- ◆ completion of a short information sheet
- ◆ a short individual follow-up discussion. The follow-up discussion will be either an informal meeting or telephone conversation of the study's findings that will enable me to verify the accuracy of the information I have attained.

I plan to be available to visit the ICU one or two days each week. A schedule of visits will be posted in the ICU along with an information poster. If you are interested in participating in this research study, or have any questions, please contact me during my visit to the ICU, at my place of work (519-464-4506), or by e-mail (summer73@ebtech.net). Thank you for your time and consideration.

Tina Hurlock-Chorostecki RN, CNCC(C), MSN(candidate)



## APPENDIX E

## Interview Questions

## Grand Question:

*Tell me about your nursing activities when caring for your patient during weaning.*

## Additional questions:

Describe to me how you like to prepare patients for weaning.

What are the most important issues for you when caring for weaning patients?

What are the least important issues?

Describe the ways intubated patients usually indicate their needs to you.

How do you use these \_\_\_\_\_ (“cues” or word that participant uses) to make decisions on their care?

Tell me how well you need to know your patient to support their weaning.

Does knowing your patient influence these decisions?

Does anyone else influence your decisions? (*Peers, physicians, hospital policy*)

Do ICU patient experience pain during weaning?

How do you know when a ventilated patient needs analgesia?

How do you balance respiratory concerns with pain management during weaning?

What is the nurses’ role of pain management in this ICU?

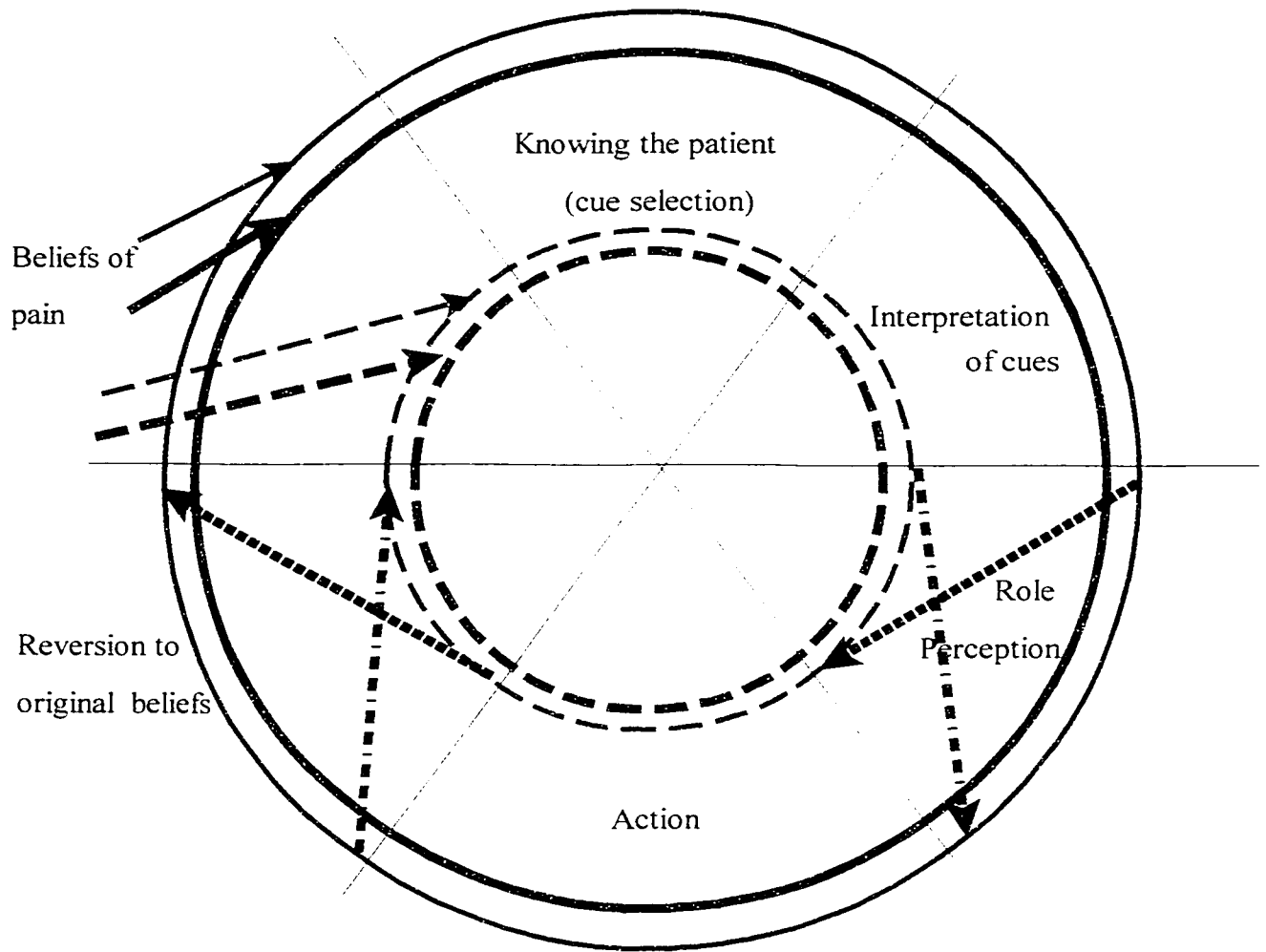
Can you think of a patient who was weaned recently in which things went very well? (Describe this to me.)

Can you think of a patient who was weaned recently in which things didn’t go well? (Describe this to me.)





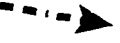

Using a scale of novice, advanced beginner, competent, proficient, and expert (Benner), where do you feel you function as an ICU nurse caring for the weaning patient?

APPENDIX F

The Belief-Decision Continuum



Lines of Decision-Making

-  Belief pain exists, less experienced
-  Belief pain exists, more experienced
-  Belief pain does not exist, less experienced
-  Belief pain does not exist, more experienced
-  Role perception - soldier
-  Role perception - advocate

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Christina Hurlock-Chorostecki was born in 1956 in Sarnia, Ontario. She graduated from Sarnia Collegiate Institute and Technical School in 1975. From there she went on to Lambton College of Applied Arts and Technology where she obtained a diploma in Early Childhood Education in 1978 and a diploma in Nursing in 1981. As a Registered Nurse working within the Sarnia Hospitals, she continued her education at the University of Windsor where she obtained a Bachelor of Science in Nursing in 1998. As a critical care nurse, she attained the Canadian Nurses' Association Certification in Critical Care Nursing in 1997. She is currently employed as a Nurse Practitioner in Intensive Care at St. Joseph's Health Centre, London and is a candidate for the Master of Science degree (Nursing) at the University of Windsor.